

The Singing Ponds

For me, one of the most welcome sounds of spring is the calling of the frogs. It begins with a few, and builds as the weather warms and the ground and water thaws. Calling all night is a sure sign of a warm evening. Late



snowfalls will temporarily quiet the frogs, but their activities resume as things warm up again. One of the fringe benefits of living in a wet place is that you can follow the seasons by listening to the frog chorus. The Chippewa National Forest is a very wet place, with over 400,000 acres of lakes and wetlands.

Eight frog species make their home on the Chippewa, each with their own distinct call by which you can identify them even if

you never see one. The calls are associated with breeding, and are made by amorous males bent on attracting their mates. Spring calling begins very early, with wood frogs (a subtle quacking noise) and western chorus frogs (think of running a fingernail across the teeth of a fine-toothed comb), which breed in March and April as soon as the ice starts to melt on ponds. They are followed by spring peepers (high peeeeping call) and northern leopard frogs (a slow snore that sounds like a finger rubbing a balloon). By May and June you will hear American toads (long, high trill) and gray treefrogs (short trill). Treefrogs have sticky pads on their feet, which enable them to be very good climbers, so you may hear them from as high as 30 feet up in the trees. In June and July the calls of the mink frog (sounds like horse hooves on a cobblestone street) and green frog (the twang of a banjo) can be heard.

Frogs vary in their habitat requirement. Some use a variety of habitats, including wetlands, streams, and lakes. Most frogs use uplands for at least some portion of their lives. Some of the most important frog habitat occurs in vernal pools, which are shallow woodland ponds that appear in low areas in the early spring. These pools often disappear by mid-to late summer. These small, fishless water bodies play an important role in the lives of woodland frogs, because they serve as breeding sites. When walking in the woods in the spring, you can often hear these ponds long before you see them, due to the concert of frog calls emanating from them. The frogs are generally alert, and fall silent by the time you reach the ponds. Despite your best efforts at sneaking, it can be pretty tough to catch a glimpse of the singers.

The lack of fish in vernal pools provides a safer environment in which frogs can breed and lay their eggs. Frogs, frog eggs, and tadpoles are preyed upon by any manner of wildlife, including aquatic insects, fish, other frogs or tadpoles, many kinds of birds, and foxes, to name a few.

The shallow waters in vernal pools warm quickly in the spring, stimulating the growth rate of the animals in the ponds. As summer advances, the drying out of the pool prevents fish populations from becoming established. It also results in a race for the tadpoles, which must develop into frogs before the water is all gone, or else they will perish.

The wood frog depends on the temporary habitats that vernal ponds provide. Known as “explosive breeders”, these frogs breed all together during a very short time period. With snow still on the ground, as soon as pond ice starts to melt, adult wood frogs migrate en masse to vernal ponds during evening showers. Most (80 – 90%) wood frogs return to breed in the ponds in which they were hatched. The males arrive first, and begin their “quacking” call, which challenges other males, and attracts the females. Over the course of a couple weeks they breed, lay eggs, and return to the surrounding forest. Each female can lay up to 3000 eggs. The development of the frog embryos is temperature dependent, with hatching generally occurring within 3 weeks. The tadpoles eat algae, detritus, and the like. They develop into frogs and leave the pools to move upland by early summer. It takes wood frogs several years to reach reproductive maturity.

Female toads actively avoid breeding in pools that contain wood frog tadpoles. Adult toads migrate to breeding pools during warm spring rainstorms, and the males call, trilling loudly to attract females. Breeding males range from two to five years in age. Toad eggs are deposited in long, double strings which contain thousands of eggs. They hatch in a few days. Mass emergences of hundreds or thousands of juvenile toadlets from breeding pools can occur in the summer. Toads may move as far as 2000 feet from breeding pools. They establish small territories in the uplands. If you have ever seen your dog spit out a toad it has found, you will understand that toads taste bad. A defensive mechanism, toads have glands that secrete a bitter tasting toxin that can make the attacker sick.

Frogs vary in their strategy to survive our long winters. The tiny spring peeper (perhaps an inch long) overwinters on land under leaf litter. Up to 65% of this frog’s body freezes during the winter months. Other species, like the green frog, require aquatic sites that do not freeze solid and that maintain enough oxygen for overwintering tadpoles and adults. American toads overwinter by burrowing into well-drained, preferably sandy soils. They burrow deep enough to stay below the frost line.

Wetlands in Minnesota, as throughout most of the U.S., have come under tremendous pressure due to land use and development. About half of the wetlands present in Minnesota prior to European settlement have been lost due to the drainage and filling efforts prevalent in the past century. This has had a profound effect upon our wildlife resources. Vernal pools are abundant on the Chippewa National Forest, providing ample breeding opportunities for woodland frogs. Healthy, undeveloped wetlands and the wildlife they support are one of the many values of our public lands.

Article Submitted by: Kelly Barrett
Wildlife Biologist, Chippewa National Forest